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SPECIAL ARTICLES

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SYPHILIS: ITS RELATION TO INFANT MORTALITY AND CHILD WELFARE
E. B. MORGAN, M.B.

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The Public Health Journal

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The Role of the Microscope in the Diagnosis of Syphilitic Infection

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THE object of this paper is to outline the necessary information and technique required in making the diagnosis of syphilitic infection by means of the microscope—also to emphasize the importance of this method of diagnosis and the difficulties attached thereto.

It is universally recognized that the Spirochæta Pallida demonstrated by Schaudinn in 1905 is the causative organism in the production of syphilitic infection. Noguchi later cultured the organisms and on inoculating the testes of monkeys and rabbits produced lesions and symptoms identical with the original lesions and symptoms. The organism has finally been classified as related to bacterial forms of life and not to Protozoa as was originally thought. The first part of the name (Spirochaeta) designates its corkscrew-like shape and the second part (Pallida) designates the fact of its being very difficult to stain with ordinary dyes in order to make it visible under the microscope.

We have all been taught that there are four forms or types of genital diseases, namely—syphilis, gonorrhœa, chancroid, and gangrenous balanitis, but for all practical purposes two only should be considered—syphilis and gonorrhoea. This is true because in every genital lesion the Spirochaeta Pallida must be excluded if possible, as the lesions of syphilis so often simulate or are associated with the other named lesions, even also with Gonococcal Infection.

The organism enters the skin or mucous membrane through

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a minute and often microscopical abrasion and its initial reaction at point of entry is comparatively slight unless associated with secondary infection as well. The early appearance of a developing chancre may therefore be very misleading, in that a few days later a large ulcer may develop, due to the proliferation of spirochaeta pallida and their more or less secondary associates, with a more or less marked tissue reaction about the site, tending to localize the infection. On the other hand from time of entry of organism into host until reaction takes place and sore develops, a period of several days to several weeks may elapse, during which time the organisms are incubating, and either the tissue is slow to react to the activities of the organisms or the organisms are of a less virulent strain.

By far the greater majority of primary genital lesions seen are in males because the lesion is so often small and comparatively painless and is not noticed by the female—or the sore may be located in vagina or on external os uteri—or even masked by gonorrhœa in both species. Urethral chancres in males and vaginal or external os uteri chancres in females are I believe comparatively common and quite often masked by gonococcal infection. We have demonstrated their presence at the Toronto General Hospital Clinic. It is also of course very common to find male urethritis of gonococcal type associated with penile or foreskin lesion due to Spirochaeta Pallida.

Re the extragenital primary lesions—which probably make up 10 to 15 per cent. of the total number—they are comparatively evenly distributed between males and females. Probably 85 per cent. of these are found on lips, tongue, mouth and nose, while the fingers and breasts make up the remaining 15 per cent. These latter 15 per cent. are found particularly among physicians, surgeons, dentists, midwives and wet nurses, the result of contact while performing their usual occupations. These lesions may simulate many other known forms of disease.

It is therefore impossible (no matter how acute the observer) to distinguish in all cases between a syphilitic and a non-syphilitic genital or extragenital lesion without the aid of the microscope—and failing with this at times even after repeated examinations, one must make repeated blood Wassermann tests while closely following the case for further clinical evidence of the disease. Even tissue sections may be examined—the technique of which will probably be improved and simplified in the near future.

It is extremely important therefore that all suspicious-looking lesions, whether genital or otherwise, should be examined at once

for Spirochaeta Pallida, as in this way the earliest possible positive diagnosis of syphilitic infection can be made, and treatment, and early cure effected. The longer a case of syphilis goes untreated the harder it is likely to effect a cure and it is only in early diagnosed and early treated cases that we can hope to get the best results from treatment. It is considered possible to effect a cure without blood Wassermann becoming positive, if case is diagnosed four to ten days from onset of sore and intensive treatment effected. We have had such cases at our clinic which proves the value of the earliest possible diagnosis.

Stokes says that hours count in the modern treatment of Primary Syphilis and that anyone neglecting to investigate a suspected sore on any part of the body and waiting for a possible positive blood Wassermann test, is criminally negligent.

One positive Spirochaeta Pallida examination is significant of syphilitic infection if conducted under expert supervision, as it is only after some considerable experience that one becomes very proficient in recognizing this organism as seen under the microscope. This is due to the variety of spirals and spirochaetes which all show more or less similar morphological characteristics—in fact we may often get three or four types of spirochaetes from the same sore and even in the same smear.

One negative result in a suspected lesion does not signify much and tests should be repeated at a few day intervals as also should blood Wassermann tests be taken and retaken in negative cases—while always being on the alert for any further clinical manifestations.

The examination for Spirochaeta Pallida is extremely important in the secretions of primary lesions and in lymph glands draining the local site—as also in the superficial lesions of secondary syphilis—that is in the earliest secondary manifestations at which time the blood Wassermann is often still negative or only weakly positive. It is of no practical importance in blood examinations as the organisms, if present, are so scattered that the chance of getting them in smears is extremely slight. Nor is it of much practical value in tertiary superficial lesions as it must be made by examination of tissue sections. However, in suspected tertiary cases with superficial or glandular lesions and with negative blood and spinal fluid Wassermanns, the tissue examination should be made.

There are many difficulties met with in attempting to find Spirochaeta Pallida and hence the necessity for repeated attempts.

The greatest difficulty met with at the Toronto General Hospital Clinic is that the great majority of primary lesions have had some form or forms of local treatment, such as ointments, powders, washes, and even cautery. The organism is so susceptible to resolution under contact with even mild antiseptics such as soap and water, that we seldom find them while active local treatment is being carried on. We make the examination and if negative we apply normal saline dressings for a few days and re-examine repeatedly if necessary. But many positive locally treated lesions are never demonstrated as such until blood Wassermann becomes positive or secondary symptoms arise. In these cases we try to aspirate the deeper layers of the lesion in order to more likely find the organisms, and even in some cases, where the lesion is apparently healed by caustic, cautery or otherwise, we curette the site and examine for spirochaetes, as a sore may be healed up very quickly at times by such means and yet general syphilis develop.

Then we also get cases who have had one or two treatments of arsenic or mercury internally before any diagnosis has been made —except on clinical evidence. In these cases we seldom get the spirochaetes until several days have elapsed at least and indeed often not at all. In our clinic we try to be definitely positive in our diagnosis before we commence active treatment and thus brand our patient as a syphilitic. This, however, might not work out satisfactorily in all general practice where facilities for investigation are not so readily obtainable as in a large clinic or in city practice, but we hope that in the near future these facilities will be available under proper supervision in every community.

Then again, the sore is often comparatively old when we first see it and the spirochaetes may have left the local site. In these cases it is always wise to examine the lymph glands draining the area involved, as these are the last line of defence during the so-called Primary Stage of Syphilis—that is before blood Wassermann is positive or secondary symptoms arise. Often even in the beginning of second week of lesion the organisms may have left the local site while at other times they can be readily demonstrated even after secondary rash is well in evidence and blood Wassermann positive.

Description of the Organism Spirochaeta Pallida.

Fortunately it is a very delicate organism and very susceptible to external influences outside its host—hence there are compara-

tively few transmissions of infection to the possible number there might be, were it more viable. It readily resolves outside its animal host unless kept under ideal conditions. Engman however states that post mortem tissue has been proven to be infectious in some cases as long as twenty-four hours.

It is a small delicate spiral of three to twenty or even more spirals and is of a total length of about the diameter of one and a half to two red blood cells. The spirals are very regular and taper at each end like a corkscrew. It takes the ordinary dye stains very poorly and is best demonstrated in a beam of reflected light against a dark background.

It has three distinct movements—

(1) Longitudinal—along its axis with slow corkscrew-like progress.

(2) Backward and forward—covering only a very small field area.

(3) Lateral—due to the lashing about of its ends in an angular or elbow-like movement.

This last may be more or less marked in some cases than in others and is best seen in the first few minutes after serum is obtained from lesion. This last movement I believe to be more significant of Spirochaeta Pallida than any one other characteristic. Its spiral shape is definitely maintained always in unstained specimens, but not always so in stained smears, etc. It can be cultured and demonstrated experimentally in testes of monkeys and rabbits.

More recent reports by Noguchi more or less confirmed by Reasoner, state that he suggests strains of Spirochaeta Pallida such as—

(*a*) Thick or Coarse Type—
Showing marked virulence experimentally such as marked in duration and necrosis with violent clinical symptoms.

(*b*) Thin or Delicate Type—
Producing mild local and clinical symptoms.

(*c*) Average Type—
Producing moderate local and clinical symptoms.

This however can only be substantiated or not, as the case may be, by long, careful observation of their morphological characteristics and experimental manifestations. It is quite reasonable to suppose however that strains do exist in this as they do in many other forms of bacteria.

MacDonagh has even described certain bodies peculiar to syphilitic tissue and blood which he believes to be involution forms

of the organism. This, however, is unlikely, due to the fact that Spirochaeta Pallida obtained from tertiary lesions, spinal fluid of tabetics and brain tissue of paretics all show the same morphological characteristics and experimental manifestations as those obtained from primary lesions.

DIFFERENTIATION OF SPIROCHAETES.

(1) Spirochaeta Pallida—

Coils are very fine, regular, slightly rounded, and not angular. It averages about seven or eight coils to the diameter of a red blood cell with clear space between each coil. It has the three movements as previously stated and is of a dead white color in dark field—not dazzling white.

(2) Spirochaeta Dentium in two types—Macradentium (large) and Microdentium (small)—

Very similar to Pallida and the smaller type is particularly so. Its coils however are more tightly rolled that is more angular and not so open as the Pallida. It averages eight to ten coils to the diameter of a red blood cell and its movements are slightly stiffer with absence of the elbow-like movement to a great extent at least. These organisms are found in the mouth which makes the examination of sores on lips, tongue, etc., exceedingly difficult to diagnose. So also may a genital lesion become contaminated with these organisms, which necessitates a very careful examination of all smears before a definite positive diagnosis of Pallida is made.

(3) More Refringent Types—

Found in genital sores of particularly dirty exudative character.

(*a*) One very similar to Pallida with regular and somewhat thicker coils and structure, averaging five coils to the diameter of a red blood cell. It is more active and covers more space in field than the Pallida and is of a more dazzling white color against a dark background. It has not the characteristic movements of Pallida and its edges and ends are more blunt.

(*b*) A short one of three or four coils, quite coarse, extremely active and easily diagnosed from Pallida. The curves in these two types are often irregular and often more or less lost while organism is at rest.

Technique of Getting Serum.

All these above mentioned facts lead us to carefully clean and dry suspected lesions to get clear if possible of superficial contaminating spirochaetes and spirillae and obtain the true causative organisms in the deeper layers of the lesion.

This is best done with normal saline and then wiped dry with clean gauze which may itself cause sufficient exudation of serum from the sore, or it may be necessary to squeeze the edges or even to curette the base of the lesion to get sufficient serum. Always avoid blood or pus cells in the serum used as far as is possible, as these distort your field of vision and give rise to lighting irregularities in Dark Field Examinations. Excess of blood may be wiped away until clearer serum exudes and which may be transferred to slide or coverslips best by use of a small capillary pipette.

In mouth lesions the same principles apply with particular care to avoid contamination as far as possible because of the marked similarity of the Dentium organism to Pallida.

In skin papules it is necessary always to scrape off the superficial layers of epithelium to get the organisms beneath.

In skin macules the application of a small blister, removal of blister fluid, and expression of serum from raw surface beneath gives best results.

In lymph glands we first fix the gland with fingers so that it bulges the skin, and then inject into the gland, with the aid of small needle and syringe, about five to seven drops of sterile normal salt solution. Then we massage the gland slightly, with needle still inserted, and aspirate a few drops of serum with the syringe and examine.

Methods for Demonstration of Spirochaetes.

(1) Dark Ground Illumination—
Always preferable to other methods in that the organism is examined in a living state.
(2) Stained Films—
(3) India Ink and Congo Red Smears—
(4) Films and Tissue Sections Stained by Silver Nitrate Methods—

The Dark Ground Illumination Method.

By this means the organism is seen in a beam of reflected light against a dark background. The principle of the method is to render a microscopic object self-luminous so that no preliminary fix-

ing or staining is necessary in order to see it. In order to obtain self- luminosity the organic structure must have a refractive index definitely different to that of the medium in which it is being examined, and it must be illuminated more or less intensely but in such a manner that only the light reflected by the organism itself can reach the observer's eye. This is effected by use of a dark background.

Any good microscope with oil immersion lens may be used, in conjunction with a properly adjusted substage dark field illuminator, which takes the place of the condenser used for ordinary microscopical examinations. This apparatus may be procured from any reliable microscope firm to fit a microscope made by the same manufacturer. Apparatus can be obtained for an above-stage illuminator, but I believe the substage type to be more easily centred to your objective, and more easily controlled.

The objective usually used is a one-twelfth inch Achromatic with oil immersion.

Ordinary oculars will suffice and of a medium power averaging X6 to X12, but some observers use the compensatory type, particularly when an Apochromatic objective is used.

The numerical aperture of the objective must in practically all cases be reduced and is best done so by use of a hard rubber funnel stop usually supplied with dark field apparatus. This is simply a short tube with constricted end which drops into the back of the objective and must fit properly in order to be effective.

Illuminants Used are of Different Types.

Probably the best point source of light is obtained in the Pointolite Lamp, supplied by the Ediswan Co., but unfortunately this can only be used on a continuous current circuit.

The electric arc is also used and serves very well except that the carbons require more or less continuous attention and one often gets a flickering, dazzling light and always much heat. For intense and clear illumination however this is probably the best illuminant.

The electric lamps of filament type are not usually considered so satisfactory, but the Spencer Lens Co. supply an apparatus with lens and a 400-watt Mazda stereopticon bulb which for all practical purposes works out quite satisfactorily and is essentially simple in its construction and manipulation.

Many other types and modifications might be mentioned.

Cover glasses and slides must be clean, free of bubbles and scratches, thin, and of even thickness to obtain the best results.

Absolute cleanliness of all apparatus is essential, also the centering of substage illuminator to your objective by use of lower-powered ocular.

The serum obtained from lesion in capillary pipette is transferred to coverglass and this is then dropped carefully on slide, avoiding air bubbles. It is then pressed out to make a thin even film. A drop of good immersion oil is used on lowered substage illuminator, one drop on body of slide beneath the film, and one drop on coverslip above the film. The substage is then raised to fuse the two drops of oil, avoiding air bubbles and objective is slowly lowered into oil on surface of coverslip. Then examine for Spirochaeta Pallida.

(1) Stained Films—

Probably the second best method is that when positive results are obtained they cannot be questioned, but unfortunately the Spirochaeta Pallida has comparatively small affinity for most staining reagents so that one may get more or less persistently negative results or else comparatively few organisms taking the stain—thus giving one a very poor conception of their frequency as shown by Dark Field Illumination Method. Again, too, there is absence of motility and often distortion of organisms due to drying and fixing. In these the films, immediately on becoming dry in air, are fixed by use of absolute alcohol, methyl alcohol or osmic acid before the stain is applied. The stains show up the Spirochaeta Pallida as rose pink in color and other spirocaetes as blue in color.

Three Methods particularly used —

(*a*) Giemsa's Long—
The oldest and probably the best method. The film is stained for twelve hours in a one in ten to fifteen dilution of stain.

(*b*) Giemsa's Rapid—
By using the same stain dilution but heating it freshly to steam heat several times, washing in tap water after each heating and applying fresh stain for each subsequent heating.

(*c*) Leishman's and many others all of which are really modifications of the former and which may be reviewed in standard text books on the subject.

(2) India Ink and Congo Red Smears—

This is by far the simplest method of examination for spirochaetes, but to differentiate the Pallida from the others is ex-

tremely difficult and is only of value at all in the hands of an experienced observer. This is true because the organism varies more or less as does the thickness of film made—that is fine in a thick film and thicker in a thin film. Again there is no motility and there is the liability to distortion of the organisms. Its best value therefore lies in its simplicity.

A drop of serum is well mixed with a drop of India Ink—very fine suspension is preferable—on a glass slide, smeared out as in a blood smear, allowed to dry in air and examined with oil immersion lens. This is all the technique necessary.

A 2 per cent. Congo Red Solution may replace the India Ink Solution but it is necessary to flood the film with acid alcohol as soon as it has dried, to produce a bluish purple background to show the organisms up.

(3) Silver Nitrate Methods of Staining Films and Tissue Sections—

Fontana's method for staining films and Noguchi's Modification of Levaditi's Method for tissue sections are probably the best. The technique of these methods may also be reviewed in standard works covering bacteriological and pathological technique.

It is therefore quite apparent that in order to make a diagnosis of syphilis by means of the microscope it is necessary to be well-informed on points mentioned in this paper and to acquire careful technique and powers of observation that one may be sure of such a diagnosis. Nevertheless this means of diagnosis is absolutely essential above all others in primary lesions if earliest possible diagnosis, treatment, and cure is to be expected.

In closing let me emphasize a few points—

(1) No observer can always diagnose a specific from a non-specific lesion by clinical observation alone.

(2) The microscope affords the best means by which we can make the earliest accurate diagnosis of syphilitic infection.

(3) The earlier the diagnosis is made the more hope for a speedy and permanent cure.

(4) The best method of demonstrating Spirochaeta Pallida is by Dark Field Illumination, with stained films probably ranking second in importance.

(5) The diagnosis is only of full value when given by an observer who has had considerable experience in this work.

(6) A single negative examination has no special significance, several examinations should be made if necessary.

(7) Facilities of Dark Field Illumination under proper supervision should be available in every community.

(8) Our medical students, general practitioners, and the people at large should be studiously taught the importance of investigating, or of having investigated, any suspicious genital or extragenital sore for the presence of Spirochaeta Pallida, if we ever hope to in any way control the transmission of syphilitic infection. Also they should be taught that the presence of gonococcal infection should stimulate them to investigate for possible syphilitic infection as well.

Community Nursing at Sulphide

JESSIE FARQUHARSON.

SULPHIDE is a little village of 300 inhabitants about 70 miles east of Peterboro. For some fifteen years The Nichols Chemical Co. have been operating a plant here, manufacturing acid and mining iron pyrites from which Sulphur is extracted.

The Company is very progressive and very anxious to promote the welfare of its employees. They pay particular attention to the health of the people—their recreation and education. The houses are equipped with bathrooms and electricity. There is a recreation hall with billiards, bowling alley and movies, and the School is supposed to be the best equipped rural school in Ontario.

For a time there was a company doctor who lived in Tweed—six miles distant—but in January 1920 a nurse was employed instead and this has been found more satisfactory.

Some years ago an Employees' Association was formed for the purpose of managing the affairs of the employees. Each employee pays a monthly fee and for each One Hundred Dollars raised by the Association, the Company puts in One Hundred Dollars. These funds keep up the recreation hall, the sick benefit fund and the nurse's salary. A small hospital is connected with the Clubhouse, where the nurse resides. The Company provides the drugs and supplies used by the nurse for dressings in the hospital and for use on her visits.

As far as industrial nursing goes, very little is done. Such stress is placed upon prevention that few accidents occur. Men come to the hospital to have every little cut dressed and there have been no infected wounds since I came. Two men have lost a little time owing to accidents since April. The mine is well ventilated and the miners seem healthy. One case of tuberculosis has developed but the man had been working here a very short time and had a history of previous hemorrhages.

When someone becomes ill, the nurse is usually sent for at once. When I do not feel that I should assume the responsibility of the illness, I advise the family to send for the Doctor. As a rule I find people unwilling to go to that expense. They think a nurse should be able to examine heart and lungs and diagnose all kinds of cases.

Many would have their dentistry done too. One man with a few old roots in his mouth is reported to have said: "She ain't no real nurse; she won't pull no teeth." Of course it is the more ignorant class who expect so much.

During a patient's illness I call every day if necessary, note the symptoms and give any nursing treatment that cannot be given by the people themselves. The health habits of the patient are always inquired into and instruction given regarding his diet and hygiene. In adults it is nearly always necessary to give advice regarding dental attention and the correction of constipation. The doctor's visits are necessarily few and much is left to the nurse. Nearly all the families have young children and there are no unmarried women in the village so the problem of household help is hard to solve.

The nurse does prenatal work, school work and infant welfare work as time allows. Prenatal cases are visited and fortnightly specimens are asked for but not always sent to the nurse. Two cases of albuminuria were found this summer. Nearly all the mothers nurse their babies. Of course there is a tendency to feed them too often, though they know better.

We were fortunate to have Dr. Bell and Miss Osborne, of the Provincial Department of Health, at a Child Welfare Clinic, Aug. 25th and 26th. Ninety children were examined, sixty of whom came from Sulphide. The clinic was a great success and has stimulated a greater interest in Child Hygiene in both parents and children.

Dr. Bell noted that there were no cases of rickets or scurvy, no pediculosis and very little skin trouble, just two cases of impetigo. There were fifteen cases of malnutrition, eleven being due to tonsils and adenoids, one to bad teeth and three to improper feeding. The children's teeth were well brushed and they looked neat and clean.

As a rule the homes are well kept, well ventilated, and the food well prepared. Of the more ignorant class—many of whom neither read nor write—less can be said. I found a case of scabies at school the other day and asked the child when he had had a bath. The reply was "Not since the clinic, Miss."

There are about ninety children in Sulphide. During the last six months there have been seven births, no deaths and no serious cases of illness among children. In children up to five years of age, six cases of diarrhoea have occurred, most of which recovered in 24 hours.

The leading people in Sulphide are much interested in the work. The Superintendent, Mr. DeBlois, could not do more to help the work along, and his sympathy and co-operation are of great assistance. The teachers, the Chairman of the School Board and the President of the Employees' Association all deserve special mention.

The teachers are very enthusiastic public health workers. In the domestic science department, the girls are learning to prepare the diets for children as outlined by the Bureau of Child Welfare of the Province. In their Art classes they are to make posters, printing on them health rules. We are hunting up pictures suitable for these posters and the children are quite enthusiastic. We have Mother Goose Health Rhymes which the children want to sing. The children are much interested in their weights and I only wish I had more time to spend with them. I give them weekly talks when time permits and they remember easily what is said. Practically every hand goes up when I ask a question in review.

We are to have a "Tonsil Day" to do the work recommended at the clinic. When making the follow up calls after the clinic I was much pleased with the attitude of many of the people. In some cases we started at the baby and went up to the grandfather. Recently I called at a home where several of the children were underweight. The mother was doing her best to follow Dr. Bell's advice. When I asked little Pauline how she was getting on she said, "I have had one chocolate and one peppermint since the clinic. We eat porridge and we haven't been to the movies."

Brief History on Leprosy in Inverness County, with Note on Modern Treatment

DR. P. S. CAMPBELL, M.H.O., *Port Hood, N.S.*

LAST winter our vigilant and efficient Health Officer in Chief, Dr. Hattie, prompted by information he received of the existence of leprosy in Inverness Co., particularly in the Lake Ainslie district, instructed me to make an investigation to determine, if possible, what grounds there were for the information—hence it was that I became interested in the subject—Leprosy.

Later on when Dr. Hattie asked me to give the result of my findings together with some general remarks on leprosy, to the assembled health officers of the province, I consented most reluctantly. If I had not looked upon his request as in reality a command from a Superior Officer I should have refused absolutely, for many of you already know and all of you will soon know that I can lay no claim to being an authority on this subject.

One thing I promise that is to be brief, so that you have the assurance of relief in sight.

In looking up this matter of leprosy in Inverness, I could not find a medical man, in the Municipality, who ever saw a case in his practice. Several of them said, there was a common belief that it existed in two or three sections some years ago. All medical men who practiced in those sections twenty to thirty years ago have gone where the good doctors go.

The information, then, with regard to leprosy in this County, is chiefly in the form of a tradition passed down through a few generations—and here it is.

Almost a century ago, an Irishman named A.A.A., who had been in the British army or navy or both—immigrated to America and settled in Z.Z.Z., Inverness Co. He was married to an English woman and hers was the first case of leprosy in the county—she died of the disease at the place above mentioned. Out of a fairly large family of girls and boys only two of the latter contracted it and died at home. The girls never showed outward signs of leprosy but the husband of one of them, named B.B.B., who lived at

Read at the Seventh Annual meeting of the Association of Medical Health Officers and First Conference of Public Health Nurses of Nova Scotia.

the rear of Y.Y.Y., contracted the disease and died there. The B.B.B. family then moved to the United States and nothing further is known of them. Another sister (that is to say a daughter of A.A.A.) married a C.C.C. at X.X.X., and although she never showed symptoms of this disease her husband died of it as did three of their children.

Another man at X.X.X., D.D.D., not a relative of the other parties mentioned above, also died of leprosy. The theory held by the people was that this man (D.D.D.) contracted it through exposure in "laying out" one of A.A.A.'s sons who had died of leprosy. While D.D.D. was lying ill, a niece of his, a Miss E.E.E., also of X.X.X., attended him—she was later stricken with leprosy and died at home. It is now about thirty years since E.E.E. died—this was the last known case in the locality.

A common belief, with some of the older people, is that leprosy obtained also in the East Lake Ainslie district between the years 1960, 1870, 1880 and 1890.

As we shall see, presently, there is available evidence to prove the correctness of the belief—the story goes that two maiden sisters named F.F.F. and several members of a G.G.G. family succumbed to it.

In response to an inquiry a letter dated April 1921 received from Dr. J. A. Longis, Med. Supt. of the Lazaretto, Tracadie, N.B., contains this information: "On July 15th, 1889, one H.H.H., from Scótchville (E. Lake Ainslie), Inverness Co., was admitted to the Lazaretto as an advanced case of tubercular leprosy. The patient was aged 44 years. He died September 1st, 1889."

I have not been able to trace this East Lake Ainslie leprosy back to A.A.A., nevertheless I believe it to be the same strain since the districts adjoin.

From the foregoing one thing is certain, viz.: that there has been leprosy in Inverness County not in the very distant past either—then follows the probability, remote if you will, nevertheless a definite probability of it still existing in parts of the municipality—so that a sharp "look out" by medical health officers in particular and by physicians in general, in Inverness and adjoining counties, is in order.

Fearing that leprosy may still be lurking in some localities waiting for a favourable opportunity to assert itself, it might not be wholly unprofitable to say something about the disease in general, with brief notes on its modern treatment.

Leprosy is a chronic disease, caused by the bacillus Lepra and

characterized by lesions of the skin, nerves, and viscera ending in anesthesia ulceration and a variety of tropic changes. It appears to have existed in Egypt some thousands of years before Christ—both in India, and in China, it was also known several centuries before the Christian era. It was probably introduced into Greece and most likely from Egypt about 300 B.C. About the time of the Christian era it was found in Italy, during the next few centuries it increased rapidly there and spread thence over the greater part of Europe. To-day the disease prevails in China, India, Iceland, Norway, Sweden, Russia, Spain, Portugal, South Africa, Australia, West India Islands, Hawaiian Islands, California, Louisiana, Minnesota, New Brunswick, Manitoba and British Columbia.

Etiology. It is now generally recognized that the bacillus Lepra, discovered by Hansen of Bergen, in 1871-74, is the cause of the disease. The best authorities believe that leprosy is propagated by contagion only—as to the particular way in which, or medium by which the contagion is applied, all investigators are not of one mind; but that it passes directly or indirectly from the infected leper, must agree as being practically proved.

Before the bacillus was discovered leprosy was almost universally believed (as it still is by some) to be an hereditary disease. Now the last authorities assert that certain qualities, predisposing to leprosy may be inherited but it is impossible to believe that the bacillus itself and therefore the disease it causes can be hereditary in the scientific sense of the word.

The bacillus lepra very closely resembles the tubercular bacillus both in appearance under the microscope and in staining qualities, it however, stains more readily in the cold. It is exceedingly difficult to groin it on the usual culture media and it has very seldom if ever been successfully inoculated into man or the lower animals.

Forms. In considering leprosy it is customary to speak of three forms—tubercular or nodular—nerve or maculo anaesthetic and mixed leprosy.

Nodular form. A short macular stage precedes the appearance of the characteristic lesion or after a prodromal period the disease begins with an attack of fever and rapid development of the nodules, which are the essential element in this form. Favourite sites for the nodules are the face, thighs, groins, back of hands and wrists. These nodules after persisting for a longer or shorter period usually either soften in the centre and are absorbed or after softening they ulcerate and discharge a yellowish pus—finally the ulcer may heal, leaving a depresser scar.

If the patient live sufficiently long the nerve trunks may be attacked giving neuralgia pains, pansis, etc. Fingers and toes may ulcerate and drop off or phalanges be absorbed. The average duration of this form is eight to ten years.

Nerve or anaesthetic form. In this type much more frequently than in the nodules, there is a long macular stage during which large areas of skin are covered by erythematous or pigmented patches—next follows neuralgia pains and anaesthesia locally. This anaesthesia begins most commonly in the feet, arms and face. At first it is superficial gradually becoming deep and absolute, so that the part may be touched with a hot iron and the patient be wholly unconscious of pain. On the whole the advance of this form is much slower—average duration being about eighteen years. Some have lived twenty to forty years.

Mixed leprosy—as the name indicates, is a combination of the nerve and nodular varieties.

Diagnosis. The presence of anaethesia in a skin lesion is very suggestive, for in no other skin disease is definite anaesthesia a symptom. Again leprous spots seldom perspire. This may be tested with a hypodermic of pilocarpin. The absolute diagnosis rests in the finding of the bacillus which may often be readily secured by excising a leproma. The bacillus is also found in the macular eruptions and in all promary deposits, nerve lesions, liver, spleen and lymphatics. It is not usually found in bone or cartilage nor in the brain.

The ordinary conception of this disease, in which the leper is symbolical of all that is loathsome, is apt to be misleading. In the earlier stages it is not, by any means, a striking disease, for often the only evidence of its existence may be a few small blotches or areas of pale or pigmented skin and perhaps disregarded by the patient himself. It is during the later stages that we see the disfiguring and nasty lesions on which the popular conception is founded.

Treatment. Of prime importance in the treatment are attention to personal cleanliness, good food, fresh air, no overstrain, fatigue or exposure . Segregation should be insisted upon. Most lepers, when placed in hygienic surroundings, improve for a time at least. Of drugs, many indeed, have been tried—the following have been more or less largely employed. Sodium, Salicylate, Turjun oil, Ichthyol, Pct. Iodide, Salvarsan, Methylene Blue, Aristol and Chaulmoorgra oil. Of these the last named alone has stood the test of time.

To-day a great deal of work is being done on leprosy at the United States Leprosy Investigation Station—Hawaii Islands. The Kaliki hospital with 150 beds situated at Kalihi, a few miles from Honolulu, is well equipped for doing this work. The Superintendent of this hospital, Dr. J. T. McDonald, has placed himself on record as saying that "the nearest approach to a specific for leprosy lies in Chaulmoorgra oil (Tynocardium oil), with this many other workers agree, in fact, some say definitely that it is a specific. The oil is obtained chiefly from India, expressed cold from the nuts of native trees (Taraktogenous Kurzii). It was formerly used in its crude state, often with beneficial results. Dr. A. L. Dean, president of Hawaii University and thorough chemist, separated the oil into four fatty acids and then on account of their insolubility converted these into thin Ethyl Esters—thus obtaining clear thin fluids quite absorbable from intramuscular injection. On experimentation it was found that all four contained the Curative Virtue. To-day then the old crude oil mixture has been almost entirely abandoned for the Ethyl Esters of the four fatty acids. The preparation as marketed is, I believe, called "Moogrol."

As a bactericidal agent, it is claimed to be one hundred times more active than Phenol, in the destruction of the lepra bacillus. Standard treatment then consists in weakly intramuscular injections under asceptic precautions, of from one to six c.c. of this Ester. The site chosen is the upper and outer quadrant of the gluteal region. In addition to this some physicians give by mouth, a capsule containing the fatty acids beginning with 1/6 gram per one hundred pounds body weight three times a day an hour after meals and gradually increasing to one gram per one hundred pounds body weight. It has been found that of the two forms of treatment the injection is much more important, in fact some investigators claim that patients on injections alone do as well as those on both—injections and capsules. Under this treatment between October 1st, 1918, and October 1st, 1920, there were discharged from the Kalihi hospital, as no longer a menace to public health, seventy-eight patients. None of those have, so far, shown any signs of recurrence. The average stay in hospital was fifteen months. In this group of seventy-eight there were forty-nine of the nodular type, twenty-four of the anaesthetic and five of the mixed.

Syphilis: Its Relation to Infant Mortality and Child Welfare, with a Discussion of Present Day Method for Its Control

BY E. A. MORGAN, M.B.

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Read before the Section of Child Hygiene of the Canadian Public Health Association, May, 1921.

ANY discussion or statistical survey pertaining to the relation of Syphilis to Infant Mortality would fall woefully short of complete thoroughness and would fail altogether to achieve the desired object, namely, the demonstration of the social and economic loss to the nation resulting from this disease, were it to include only the infant deaths due to syphilis. In order to reach a more accurate conception of the seriousness of the problem I have taken the liberty of using the term Infant Mortality in a broader application than is customary, and have made it include the prenatal loss of life. As a matter of fact it is the prenatal ravages of this disease which are the most disastrous. All of us, who have been interested in the problem of reconstruction following the war have realized the supreme importance of the conservation of the infant life, but how many of us have given more than a passing thought to the birth-rate problem? We all recognize the ultimate effect on the birth-rate of the loss of thousands of Canada's manhood in the war. Added to this there is the universal tendency amongst the married to shirk the expense and responsibilities of parenthood. The present high cost of living is mainly responsible for this state of affairs. To quote actual figures:—the birth-rate in Toronto dropped from 29.7 per 1,000 population in 1914 to 22.6 per 1,000 in 1919, and a similar decline occurred in the Provincial figures. The depletion of the country's young men in the war and the high cost of living are factors over which we have no control, but these are by no means the only factors operating in the production of a lowered birth-rate.

Another and a very important one is syphilis, and this one we are at present, capable of controlling, and, I hope in the future, will control. Just how important it is, is very difficult to put into figures, but an approximate estimate can be made.

In 1920 there were 13,300 births recorded in Toronto and 675 still-births. It will be observed that the still-births are approximately 5 per cent. of the live births—a proportion that is fairly constant in every country.

(1) Few figures are available which are of any help in arriving at an estimate of the number of miscarriages. They are probably twice as numerous as still-births, or 10 per cent. of the total live-births—a conservative estimate. The total, therefore, for miscarriages and still-births is 15 per cent. of the live-births. That this figure cannot be very far astray is shown by statistics given by Adair.

(2) Of 2,773 pregnancies 2,422 ended at term and 351 or 14.5 per cent. terminated prematurely. Schwartz (10) found that in 27,711 pregnancies the miscarriages were more than five times as frequent as still-births, but the two added together were only 10.56 per cent. of the living births. Accepting the figure 15 per cent. as an average one, there were thus 2,000 miscarriages and still-births in Toronto in 1920. According to Jeans (5) and others (3.4) at least 30 per cent. of these are the result of Syphilis, giving a figure of 670 as an index of the prenatal mortality for one year in Toronto alone due to this disease. The effect of syphilis in producing sterility need not be considered, since it is a doubtful one. This disease may be an important cause of childless marriages, but it is not a frequent cause of sterility.

Post-Natal Mortality.—In attempting to obtain statistics regarding the number of infant deaths due to syphilis one is at once confronted with difficulties. Firstly, the luetic infection may be, and probably is, only the remote cause of death and for that reason frequently does not appear on the death certificate at all. Secondly, there is a very evident and very pardonable hesitancy on the part of all physicians to enter syphilis as the cause of death on a certificate which is apt to be, as one English physician puts it, "Hawked about among relatives for the delectation of prudes." In Toronto during the past year there were filed only 19 certificates of death for infants under one year on which the diagnosis of syphilis appeared as either a remote or immediate cause of death. It must be obvious to anyone interested in the problem that this figure is absurdly inaccurate and incomplete. Seventeen cases of Congenital Syphilis died in the wards of the Hospital for Sick Children alone in that year. Out of curiosity I looked up the certified cause of death in these seventeen cases and discovered that in eight or nearly 50 per cent. there was no mention of syphilis. If a hospital in-

terne, who has at hand, every facility for making an accurate diagnosis and who, in signing the death certificate, is indifferent to the sensibilities of the relatives, fails to furnish an accurate record of death, is it any wonder that remissness is displayed by the general practitioner who is frequently unable to make a definite diagnosis, and who is very liable to suffer professionally if he is honest in his certification?

I have arrived at an approximate figure for the infant deaths due to syphilis by an estimate based on statistics of prevalence. Various estimates have been made of the prevalence of this disease among the infant population. Figures obtained from outpatient departments of hospitals on this continent, and admissions to the wards show a range of from 2 per cent to 6 per cent. (6) Jeans believes that 5 per cent. of the infant population is syphilitic (1). Of 725 successive admissions to the Medical Wards of the Hospital for Sick Children, Toronto, 29 or 4 per cent. were proven serologically and clinically to be syphilitic. Since the great majority of deaths due to lues occur in the first few months of life, whereas the majority of the hospital admissions are over that age, it is probable that considerably more than 4 per cent. of all births are syphilitic. This would mean 665 luetic children born each year in this city, and of these at least 25 per cent. or 166 would die in the first year of life. According to these figures, syphilis would supersede broncho-pneumonia as a cause of infant deaths in the first year and would take its place beside decomposition; and I am firmly convinced that more accurate death certification would show this to be the case.

A glance at the premature death-rate may help to convince the sceptical. There were 305 deaths due to prematurity in this city last year—the largest single factor in the infant mortality. Careful estimates based on serological and post-mortem examinations have shown that about 18 per cent. of prematures are syphilitic (2) Thus here alone we can account for 54 infant deaths due to syphilis or one-third of the previous estimate of 166.

TABLE I.

Showing Estimated Wastage due to Syphilis in Toronto for One Year.

Registered Live-births	13,300	
5 per cent. of these Syphilitic (estimate)	665	
25 per cent. Die in 1st year		166
Registered Still-Births	670	
30 per cent. Syphilitic (estimate)		223
Miscarriages (estimate)	1,340	
30 per cent. Syphilitic (estimate)		447
Wastage due to Syphilis total		836

TABLE II.

Showing the Wastage in Known Syphilitic Families, compared with that in Families Showing no Obvious Signs of Syphilis. Figures Obtained from Various Sources.

	Per cent. of Total Pregnancies.				
	Miscarriage and Still Births	Premature	Living Healthy	Living Syphilitic	Died Early
Syphilitic Families	30.3	2,2	16.6	63.2	30.2
Families showing no obvious signs of Syphilis	9.7	0.9	76.0	.....	15.0

Congenital Syphilis and Child Welfare.—If a syphilitic infant survives the first twelve months of life there is a much greater chance of his reaching maturity. Approximately 90 per cent. of the deaths due to congenital syphilis occur in the first year. In the United States in 1915 there were 2,249 deaths under five years recorded as due to syphilis and of these 2,022 or 90 per cent. occurred in the first year. (7) As a rule the second, third and fourth years are uneventful even in an untreated case. After this time various symptoms and signs—the so-called late or tertiary manifestations of hereditary lues—make their appearance and it is these manifestations that have an important bearing on the Child Welfare problem.

It will be seen that the special senses, particularly sight and hearing, the osseous system and the brain are the most frequently attacked. Statistics gathered from various sources show that congenital syphilis is responsible for 31.2 per cent. to 34 per cent. of blindness in children, and for about 17.25 per cent. of acquired deafness. (8) It is also an important and frequently unrecognized cause of mental deficiency in children. The frequency of physical deformities due to syphilis may be demonstrated also by a study of a series of cases. During the past 22 months the Hospital for Sick Children has treated in the wards and Out-Patients' Department 127 children suffering from Congenital Syphilis and one from the acquired form. Sixty-six of these children were over four years of age and of these 35 or 53 per cent. have at present, or have had interstitial keratitis. In 11, or 16.6 per cent. the sight is permanently impaired. In 4 or 6 per cent. deafness of varying degree is present. Thirteen or 20 per cent. are mentally deficient and four of these are partially paralyzed. Twenty-five of the 127 cases have been lost sight of, but of the remaining 102, 26 or 25.5 per cent. died. There are thus 76 cases alive and under observation. Of these 7 will of necessity become permanent charges on the com-

munity as the result of incurable physical or mental defects. Besides the more serious tertiary manifestations already mentioned there are numerous deformities of the bones and joints, such as sabre-shin and arthritis, deformities of the teeth, nose, pharynx and larynx and systemic diseases such as anaemia and malnutrition. In fact, of the 66 children over 4 years of age 47 or 70 per cent. would be marked as physically or mentally sub-standard. When one realizes that at least 5 per cent. of the children of the country are syphilitic the magnitude of the consequences of the disease will be more thoroughly appreciated.

Apart from the lowering of the physical and mental standard of the child we must consider also the grave economic losses to the country which is entailed by the loss of earning capacity, and by the sums expended on the treatment, care and education of the more seriously affected.

Methods of Control.—For convenience sake I have dealt with the solution of the problem under three headings, the control of syphilis in its relation to (a) The birth rate, (b) Infant mortality, (c) Child Welfare.

(a) Birth rate.—The two most important factors for consideration here are firstly, the education of infected adults and secondly, the treatment of pregnant syphilitic women. Consideration of the first factor is intimately bound up with the aims and activities of the Canadian National Council for Combating Venereal Diseases and the question is too large a one to permit of more than a brief discussion in this paper. By proper educational propaganda it is hoped to accomplish: (1) The prevention of marriage of infected adults until they are pronounced cured by a physician. (2) A realization among syphilitics of the necessity of systematic treatment if they are anxious to have healthy children. Syphilis is responsible for a fairly large per cent of childless marriages and in a great many of these cases the couple, though anxious to have children, are absolutely ignorant of the true cause of the repeated miscarriages and still-births. Many of them would willingly undergo thorough courses of treatment if they were promised thereby even a reasonable chance of parenthood.

The treatment of the pregnant syphilitic woman is a problem for the prenatal clinics and is one that has a great future. In large centres, such as Toronto, the performance of routine Wassermann reactions on every pregnant woman applying for examination is possible. In the Wassermann positive cases the probability of securing a healthy infant by adequate treatment of the mother

during the period of gestation has been frequently and conclusively demonstrated.

(b) Infant Mortality.—All that has been touched upon in the previous paragraph applies here with equal force. Added factors must, however, be considered. There is the treatment of the syphilitic infant as soon as symptoms of the disease appear. With the first evidence of snuffles the child should receive intravenous arsenical medication, alternated or combined with mercurial inunctions. The earlier treatment is instituted the better is the prognosis. Since specific treatment is beyond the financial means of many individuals, free-treatment clinics are now in operation in many towns in the province, such clinics being subsidized by the Federal and Provincial Governments. To my mind the maintenance of the child's general nutrition is of even more importance than anti-syphilitic medication. It is therefore essential that the child be kept nursing, since only by this means can we avoid the frequent gastro-intestinal and nutritional disturbances which are common to bottle-fed syphilitic infants. Veeder (9) has shown that the mortality for artificially fed luetic infants is four times as great as for breast-fed ones.

(c) Child Welfare.—Under this heading I shall deal mainly with those children who have survived the first year. Recognition of the tertiary luetic manifestations by Public Health nurses, and by physicians is of paramount importance if these children are to be referred for treatment. The first step toward this end must be the proper education of nurses during their training and more thorough teaching of the subject in medical schools. To give you some idea of the results of treatment I have chosen all cases from the special treatment clinic of the Hospital for Sick Children, who have been under treatment for a period of more than five months. Such a series, however, gives one no true conception of the mortality of congenital syphilis since most of the young infants in the secondary stage are admitted directly to the wards of the hospital. As pointed out in the previous paragraph, the mortality for 127 cases was 25.5 per cent. Though this figure may seem unduly large, it compares very favorably with figures reported by many other workers in this field. There is every reason to believe that co-incident with more widespread recognition of the disease and its seriousness, by the laity and the profession this figure will be materially reduced. Also I will not attempt to cover the results of treatment as evidenced by the improvement in local lesions such as the eruption, gummatous deposits, periostitis, interstitial keratitis, etc., but will

confine the discussion to the results as indicated by the changes in the Wassermann reaction. There are 60 cases in the series who have been under treatment for a period of five months or more. Twelve or 20 per cent. are apparently cured—that is, have had repeated, consecutive negative Wassermann reactions. Twenty or 33.3 per cent. are markedly improved, that is the Wassermann reaction has been reduced to a weakly positive, and in some cases has fluctuated between positive and negative. Twelve cases or 20 per cent. have been slightly improved and 16 or 26.6 per cent. have shown no improvement in the intensity of the Wassermann reaction. One very striking fact about the cases has been that the irregular attendants for treatment have shown little or no progress. Of ten children with whom we have had difficulty in this respect seven have shown no improvement. On the whole the results are very encouraging and particularly so in the young infants where treatment is commenced shortly after the first symptoms appear. Much of the success in the last year has been due to the employment of Sodium Diarsenol instead of Diarsenol and Neo-Diarsenol. The first named drug seems to be particularly suitable for the treatment of infants and children. No reaction of even a moderately severe grade has been encountered following administration during the past ten months, and the effect on the Wassermann reaction has been very satisfactory. My own feeling is that there are few cases of hereditary syphilis which cannot be absolutely cured provided we have the intelligent and interested co-operation of the child or parent.

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(3) Bartholomew, R. A., Journ. Am. Med. Assoc., 1918, LXX., 289.
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(6) Churchill, F. S., and Austin, R. S., Am. Jour. Dis. Chil., 1916, IV., 355.
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(8) Royal Commission on Venereal Diseases, Final Report, 1916, 30.
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The Victorian Order of Nurses

The Child Who is "Different"

BY AGNES JOYNES, V.O.N.

OUR nurses begin to show the strain of the long spell of hot weather we have had. A parboiled group, they gather around the table every morning. When one asks another to pass anything at table, it is passed with an oh-I-wish-you'd-stop-bothering-me expression, which makes the asker think perhaps it would be better to walk around after it the next time. Each seems to be wondering where the energy for the day's work is coming from,—the energy to carry a heavy handbag through the red-hot streets, and to stoop for hours over low beds in rooms so close that the poor patient is gasping for breath. Each one hopes that the work, which has been heavy of late, will by some happy chance lighten a little. Hoping against hope, for we know that this same weather is making new patients for us every hour in the day.

"If I had life enough," said one girl at dinner to-day, "I should be worrying about a certain condition which we meet so often and which I am 'up against' just now."

"Stop worrying about conditions!" was the quick retort from another part of the table, "and you'll have more life. Stop worrying yourself and make other people worry a little—those people who have the power to do things, and you will accomplish something."

"What has put the latest wrinkle in your brow?" asks a motherly voice from somewhere else. And the nurse tells her story:

She has just come from a home where her patient, the mother of a large family, was in tears because one of her children could not "get on" in school. The teacher of the busy public school which he attended was having "a terrible time" with him. A neighbor had been tactfully intimating that the child had no brains, or was defective, which the mother considered about the same thing. She declared that he was not defective, he was only "different," and if she had the time, she was sure she could teach him.

She had produced some quite unusual mechanism of the child's invention and asked: "Could a child without brains do that?" She knew, she said, that he was different from the rest of the family; but she also knew that in some ways he was the brightest one of

them all. She looked to the visiting nurse to tell her what to do. "I thought perhaps you could help me!" she had told the nurse, as so many of her patients, under so many different circumstances, had told her before.

It will always be so, I suppose. The one who enters our homes when we are in pain and makes us comfortable, or helps to keep death from our bedsides, will always seem near to our hearts. We sometimes delude ourselves into believing that they know about everything in the way of relief for trouble. We tell them our troubles and listen to their advice and heed it as perhaps we would heed advice from no other source. And so it is in this way that the visiting nurse, while she is doing her bedside nursing day by day, probably learns more about the economic conditions which produce distress and unhappiness, than all of the so-called "investigators" combined.

It is because the people who could remedy those conditions, cannot come closely enough in contact with them to see them as they are; and because they have not been as clearly presented as they should have been by those who do come in close contact, that they exist year after year. It is the privilege and honour of the Victorian Order of Nurses to be able to assist greatly in ridding Canada of many undesirable conditions with which we struggle day after day. Each nurse has been taught to exert all her influence to that end, and we have seen some of the fruit of our labors. We become discouraged at times, but the work is well worth while and we must keep on.

Our nurse is discouraged to-day, but she has done the best she can under the circumstances and she must wait for results. She has begged the mother to work, as she herself is working, for special teaching for those "different" children, whom we in our superior way, term defective. Different they may be, and not always capable of "getting on" with a class in school, but that does not mean that they are defective in that which goes to make successful life. It does mean, however, that our school system is very defective, and that if their education is given over to the busy teacher of the public school, they are going to grow up useless and perhaps with some marvellous talent undeveloped. Lives which might be made useful and comfortable, to say the least, will be miserable and degraded, instead.

That is wrong! wrong! We have no right to set aside as hopeless the child who simply does not happen to possess the "all around" kind of mind which most children have. What if he does

seem to have only a "one track" existence. Perhaps he will be the more useful for that. That means specialization along his own particular line, you know; and specialists are "all the rage" just now. But even should the child show no outstanding faculty at all, still he is not to be cast aside. He can still be taught to mechanically use his hands to earn his own living.

Especially did the nurse recall one thing which her patient had said:—"I am a widow and I do not see how I can afford to have a child grow up useless. Things look pretty dark to me when I stop to think!"

And that is one serious consideration. She cannot afford to have a child grow up useless. Neither can the country afford it. It is being impoverished now by its upkeep of dependent people. I quote from our best authority upon the subject when I state that those children need only the proper teaching and guidance. Then why should we allow thousands who might have been made self-supporting at least, to become dependents, and then pay an army of people, year after year, to dispense charity to them?

Should they thank us for such charity? To have one intelligent, understanding look into such a blasted existence, is to have the charities of all the ages flung back in one's face. A blow not to be forgotten.

We all know that some of those "different" children grow to wonderful men and women in spite of us all. In spite of our misunderstandings and the drawbacks which we put in their way in our so-called pity for them, they have achieved wonders. Many a great man has admitted, when he has risen to the point where he is no longer ashamed of the fact, that the public school teachers had given him up in despair. But he happened to have parents, or some other true friend, to help him out. I know a brilliant physician who will tell you of miserable hours in his childhood when he hung his young head in shame because he was called the village fool. But a competent mother took him in hand, and he was not lost to the world as he might have been. And you know the time-worn saying that in childhood it is difficult to distinguish the genius from the fool.

Nobody is hopeless nowadays, you know. We find that much can be done for children who are not merely a little different from the ordinary child, but whom we have called imbeciles, and allowed to live and die like beasts. I do not know how much is being done in Canada along this line. I am more or less a stranger in the land of my birth—an accident which I hope to remedy in the future—

but I shall tell you a little of that which is being done in another part of the world.

Dr. Downing, a brilliant woman physician of Massachusetts, U.S.A., takes such children and makes them over as you would not believe possible from the material. For example: One of her patients (a child answering to all your ideas of the imbecile—picture him for yourself—the vacant eyes; the open, drooling mouth; the arms swinging aimlessly, weirdly about; the inarticulate attempt at speech; a child crawling on all fours) is a new being after a few years under her skilled hand.

For all those seemingly hopeless conditions, Dr. Downing could see a remediable reason. The loose mouth and the hanging tongue --that was easy. She had his wickedly overgrown tonsils removed, and adenoids which were cutting off his breath. Keep from a child the fresh air necessary to healthy life and you destroy the life both of mind and body. She felt sure that his inability to walk was due primarily to lack of sight. She took the child to an oculist and was laughed at for pains and refused assistance. She took him to other oculists, with the same result.

Did Dr. Downing stop there? Not at all. She simply picked up the little lump of flesh and blood which other scientists were so willing to fling to the scrap heap, and carried it to an optician's office. She patiently placed glasses, one pair after another, upon the vacant looking eyes; and after a while, a pair was used which made the child "sit up and take notice." He showed something which resembled an interest in his surroundings. She worked on until she was sure that she had chosen the most suitable of the glasses at her disposal, and then took the child to her home.

The history of that case, and of others under her care, could be obtained from Dr. Downing herself. I shall not pretend to go into detail. I do not know enough about her work for that. But when I first saw the child, shortly after he had been taken in hand by Dr. Downing, he was breathing through his nostrils, and only rarely was it necessary to remind him to close his mouth. She was teaching him the alphabet—an alphabet made specially to attract the attention of such a child. She was training the aimless, little hands to work in unison with his brain. She was beginning with his finger tips, having him practise holding small pegs between his thumb and fingers, and then placing the pegs in holes in a board. I need not tell you that it was only after much patient directing that the first peg could be held by the unruly little fingers, to say nothing of placing it in the hole at which it was aimed.

But this was improved upon day by day, until she had accomplished that which she sought. She was slowly developing undeveloped faculties which never would have developed without aid. And after many months of patient working, one saw no longer any semblance to the imbecile. One saw a child, apparently somewhat bashful and diffident, but quite an ordinary child. And his brain development had been such and his ability to acquire knowledge, that Dr. Downing thought she could soon place him in a school with other children. I have not followed any of her patients for long, but I know that Yale University has since offered her a department there to work out her theories in her own way.

Now, if so much may be done for such children as those, shall we allow our children who are just a little "different" to be cast aside? Some of them. I repeat will make names for themselves, good or bad according as they have been influenced. Let us see then that the influence and teaching are of the right kind; or we may be sorry.

For instance, one of the neglected ones may rise to a seat in our legislature some day, and then—oh, Canada! Some may get into our nursing profession, and then—oh, poor patient! Some of them (Heaven forbid the calamity) may even become a member of our Board of Health Directors, and then—oh, nonsense! let us return to possibilities. And it is possible to make self-supporting, self-respecting citizens of those children whom we call defective.

Social Background

Emergency Unemployment Work Report of the Toronto Neighbourhood Workers' Association for Winter of 1920-21.

WHEN unemployment became acute in the city it was felt that it would be more satisfactory if the secretaries were in district offices, where they could work in close coperation with the nurses, dealing with the problems that arose in connection with other needs than those of food and coal in the families to which the nurses were giving relief.

Number and Type of Families.

1,526 families, presenting 1,903 specific problems, were referred to the secretaries up till May 1st. Rent was the cause of trouble in more than 50 per cent. of the cases. About 10 per cent. of the total applications were unnecessary, being from people who were more or less taking advantage of the situation, while another 15 per cent. were able to find their own solution through some unexpected windfall, or by carrying out the advice of the secretary, before the secretary had to take action herself. Loans were given as a last resort, when there were no other sources of immediate help. One-third of the families had loans. One might note that the working man landlord was much more sympathetic than the well-to-do owner. The families, as a rule, represented a good independent working group. Less than half (652) were known to the Exchange, while 42 others were known to have a record not registered, and from the majority of the registrations one would not infer previous dependency. Only about 150 families present problems that will necessitate continued work by the Neighborhood Workers Association after the unemployment emergency has ceased, and a few others are the responsibility of agencies to which they were immediately referred.

Employment of Workers.

At least 25 per cent. of the men were laid off from construction work and other seasonal trades. When regular seasonal workers were questioned as to why they could not maintain themselves as in other winters, they stated that the rainy fall caused short time and lessened earnings, that they usually obtained odd jobs, or

worked in factories during the winters; that their friends were out of work and could not lend them money to tide them over.

A little less than half the men could be classed as even semi-skilled, and many men with trades had not been employed at them for months, and had been working as laborers with lower wages and irregular work.

Only one-third of the men were known to be working at work which might be expected to be regular, by the end of April. The average labourer had been six weeks out of work when he applied to the Neighbourhood Workers, while the average, for the semi-skilled, was two or three weeks longer. A few of the men tried to obtain help under false pretences when they were working. They over-reached themselves when they applied for help with rent, and the Secretary asked the employer for the man's record, and if he could soon be re-employed.

There were also a few instances of employers taking advantage of the situation. One firm had a janitor for a year and paid him $19 a week—on which he could *just* keep his family. In February they let him go and engaged an old man at $13 a week. On enquiry they said the first man was a good worker and had wanted to stay, but they knew he could not keep his family on the lower wage, and as they could get cheaper help they did not feel justified in employing him, even though he wished to stay at the reduced wage.

While the majority of the families needed help for debts—whether rent, insurance, light, or other payments—and clothing, there were many varied services rendered. Sometimes the deterioration due to unemployment led to marital troubles. In some families the wife went to work and the husband looked for company elsewhere. The Secretary had to adjust difficulties—sometimes moving the family, sometimes getting work, though rarely was the last ever possible—or somehow temporarily at least patching up a truce. When time permitted, the opportunity was taken to fill some of the many social needs that are found in any group of families.

Board of Trade.

As it was obvious by the end of December that there would be great need for help with rents, the Board of Trade instituted a loan fund, which was of the greatest assistance. This work was done so quietly that possibly the public do not realize what an outstanding public service was thus rendered by the Board of Trade. The

Neighbourhood Workers Association acted in co-operation with the Board of Trade, investigating and recommending families for loans. After the emergency work was over, Mr. Tolchard, Secretary of the Board of Trade, expressed the appreciation of the Board for the work done, in part as follows:

"I am also instructed to convey to you, and through you to the workers associated with you in the Neighbourhood Workers' Association, the sincere thanks and appreciation of the Board of Trade Emergency Loan Fund Committee for the very splendid service which has been rendered during the past winter in investigating and reporting upon applications for rental loans. The Committee has at all times been well pleased with the complete reports which have been presented and the thoroughness of the work of your Association."

While there is no question but that the fact that there was some means of dealing with rents, and other problems prevented a great deal of suffering, it was in many ways disheartening work. The majority of the men wanted work—not help. At first they were optimistic, but as week after week their searching and tramping brought in only enough to pay part of possibly a gas bill, they became despondent and sometimes slouchy in appearance. More genuine thanks were given for a job, secured in most cases, than for material help.

REPORT OF WORK DONE IN CONNECTION WITH EMERGENCY UNEMPLOYMENT.

JANUARY 1ST TO MAY 1ST, 1921.

Main Causes of Financial Stringency in Family:

Cases where problem was caused by unemployment; family were normally financially independent	1,269
Cases where problem was due to a social disability in addition to unemployment (not including temporary illness)	144
Cases where there was under employment, and not sufficient income to keep family independent	43
Cases where present financial situation was largely, or wholly due to expense of recent illness, followed by unemployment	70
Total Number of Families	1,526

Specific Problems Presented:

Clothing	344
Gas, Hydro, Water Bills	214

Rent		1,104
Other debts, medical or household supplies, transportation, special investigation to help decide eligibility for relief and miscellaneous		241
		1,903

Disposition of Problems Presented:

(Note.—Where several problems presented by one family, were solved in the same manner, the solution is only included once. Similarly one problem might require a combination of dispositions.)

1. Unnecessary applications. Family was quite capable of meeting the problem and it was left entirely with them			183
2. Advice and direction given which assisted family to meet the problem themselves			103
3. Referred to another agency			146
4. Legal aid obtained			13
5. Friendly visitor obtained; church connection or family relation strengthened			43
6. Investigation for Public Health Nurse involving more than ordinary consultation			38
7. Adjustment made with creditor			107
8. Creditor staved off until			
	(1) Family obtained work; or aid from friends	65	
	(2) Problem had ultimately to be handled, but on a smaller scale	9	
	(3) Still pending	15	
			89
9. Work obtained.			
	(1) Temporary work	40	
	(2) Permanent work	21	
	(3) Work was refused	29	
	(4) Man secured other work at the same time and so did not take job	6	
			96
10. Material Relief Secured, Other Than Loans:			
	(1) Clothing—		
	Through individuals	100	
	Through churches	83	
	Through organizations	84	
	Through relatives	1	
			268

(2) Supplementary Food—		
Through organizations	10	
Through churches	1	
		11
(3) Cash or other Relief—		
Through individuals	12	
Through relatives	10	
Through churches	28	
Through organizations	63	
		113
Total material relief secured		392
11. Board of Trade Loans:		
(1) Families to which loans were given (56 of these cases had repeated loans, not always from the same source	444	
(3) Man found solution before cheque came	26	
(3) Refused	9	
		479
12. N. W. A. gave loan (20 of these cases had repeated loans, not always from the same source		53
13. Miscellaneous services		44
13. Man was told to make a further effort with the landlord, and did not return		55
15. Man moved, or working, or found a solution before any action was taken		78
16. Man refused information required, or co-operation		51
Total disposition of problems		1,970

County Work:

Just before Christmas the Neighbourhood Workers Association received numerous appeals from unemployed men living in the county. Many of them were city men, who, not able to pay city rents, moved out but still worked in the city, and like many others were laid off. By the time the City Relief was organized they were at the end of their resources. They tramped in, as before, to the Employment Bureau and discovered that relief was only for city men. They were referred to the Neighborhood Workers Association. The Secretary, if it were necessary, gave an emergency order; later she tried to reach some minister or prominent citizen near the man's home and ask him to visit and help the family if it were wise. Some of the township officials were willing to help, but until

elections were over they did not feel able to spend money on much relief. Christmas week the men came into the office, many of them white and overstrung, heartsick at the Christmas they saw ahead for the children. As far as possible endeavours were made to see that no family missed Christmas dinner, but the fact that all work had practically to be done by long distance phones, and that even these were scarce in the localities, added to the difficulty. Altogether 201 of these men came to the office before the middle of January, when the townships organized their relief on a broader basis and undertook full responsibility, and made unnecessary the weary round that many of the men made in an effort to find help.

M. NAIRN,
Associate Secretary, Division of Family Welfare.

The Provincial Board of Health of Ontario

COMMUNICABLE DISEASES REPORTED BY LOCAL BOARDS OF HEALTH FOR THE MONTH OF SEPTEMBER, 1921.

COMPARATIVE TABLE.

Diseases.	Cases.	Deaths.	Cases.	Deaths.
	1921.		1920.	
Small-pox	48	0	93	1
Scarlet Fever	171	5	188	3
Diphtheria	294	25	434	51
Measles	14	0	142	5
Whooping Cough	150	10	177	15
Typhoid	120	31	75	11
Tuberculosis	175	100	180	113
Infantile Paralysis	17	1	7	2
Cerebro-Spinal Meningitis	8	8	5	4
Influenza	35	4	6	6
Primary Pneumonia	....	98	....	46
	1032	282	1307	257

VENEREAL DISEASES REPORTED BY MEDICAL OFFICERS OF HEALTH, SEPTEMBER, 1921.

	Sept. 1921. Cases.	Sept. 1920. Cases.
Syphilis	226	157
Gonorrhoea	166	213
Chancroid	1	8
	393	378

SMALL-POX CASES REPORTED FOR SEPTEMBER, 1921.

County.	Municipalities.	Cases.
Algoma	Sault Ste. Marie	1
Carleton	Ottawa	22
Grey	Owen Sound	1
Hastings	Belleville	1
Leeds and Grenville	Front of Leeds	6
Nipissing	Mattawa	1
Temiskaming	Hudson	2
	New Liskeard	5
	Byfield	2
Thunder Bay	Fort William	1
Waterloo	Waterloo Township	1
York	Toronto	5
		48

The reports of communicable diseases by Local Boards of Health for the month of September show a decided reduction in small-pox, diphtheria, measles and whooping cough compared with the same month of last year, as may be seen in the comparative table. The most noticeable decrease is in diphtheria and measles. The deaths from the former are only one-half the number reported in September, 1920.

Some of the other diseases show a low prevalence with the exception of typhoid fever which is generally more prevalent in the months of August and September than any of the other months, and is no exception this year as the returns received give 45 cases and 20 more deaths than in the same month in 1920.

The 35 cases of influenza reported were mostly in the county of Leeds, one township had 30 cases but no deaths.

Infantile paralysis was reported from the following places: St. Catharines 1 death Essex Border, Orillia Tp., Scarboro Tp., Fort William 1 case each, Toronto 8 cases and Orillia town 4 cases.

Cerebro-Spinal Meningitis 8 deaths were reported from this disease from the following places: Ford City 2, Belleville, Euphemia Tp., Petrolia, London, Stratford, Kenyon Tp., 1 death each.

News Notes

APPEAL TO JUDGE SUCCEEDS IN RAISING M.O.H.'s SALARY.

Woodstock, Ont., Oct. 14.—Judge Wallace yesterday gave his decision in the appeal of Dr. Ruttan, local Medical Officer of Health, who asked for amount named by the judge was $1,200. The doctor had been receiving $500.

The appeal to the judge followed a request to the City Council by Dr. Ruttan, which was turned down.

The Canadian National Committee made a mental hygiene survey of Manitoba in the autumn of 1918, and presented a report to the Public Welfare Commission of the Province. Many recommendations were given, and now that three years have elapsed it is interesting to note the developments that have taken place. More than $2,300,000 has been spent since 1918 on capital account for the insame and feeble-minded. Great progress has been made in enlarging hospital staffs and in securing individuals of the highest type and training. In 1918 two full-time physicians were in charge of 1,200 insane patients at Brandon and Selkirk. Arrangements were made for the part-time assistance of two other men. What is the situation to-day? There are no less than ten fully qualified whole-time mental specialists on active duty. Indeed, during the summer months, the number was augmented to twelve. Two social workers are employed for mental hygiene duties in Winnipeg, and in connection with paroled patients from Selkirk. Five trained Occupational Workers serve the Psychopathic Hospital, and the Provincial Hospitals at Brandon and Selkirk. A technician is employed at Brandon for laboratory duties. In due course a fully qualified medical pathologist will be added to the staff.

The report of the National Committee emphasized the need of a training school on the farm colony plan, for feeble-minded individuals. The first unit of such an institution has been built at Portage la Prairie at a cost of $150,000.

The Psychopathic Hospital has proven a great boon to Manitoba. There is little reticence on the part of relatives and friends

to send patients for treatment, and the institution virtually acts as a clearing house for all mental cases of the Province. It is utilized as an instruction centre for medical students attending the University of Manitoba. Students have clinics twice a week.

An arrangement is now being made for the organization of an itinerant mental clinic to visit the fifteen school inspectoral divisions twice a year. The clinic staff will include a physcian, social worker, and clerk. Manitoba is the first province to have a travelling mental clinic performing school work—a clinic sustained by the Government.

The Secretary of the Canadian Association for the Prevention of Tuberculosis was the speaker at the Canadian Conference of Public Welfare, in Montreal, September 28th, in the interests of the Association. Special stress was laid upon the early detection of cases, ample provision for protection of children below par, and assured financial aid with sheltered employment for the afflicted, after leaving the Sanatorium.

The Canadian National Committee for Mental Hygiene is at present engaged in making a survey of conditions in Alberta by request of the Provincial Government.

By courtesy of Dr. Amyot, Federal Deputy Minister of Health, time during the programme of the Federal Council of Health was granted for a meeting of the Executive Council of the Canadian Association for the Prevention of Tuberculosis. Nineteen members were present at the meeting in the University Club, Ottawa, October 20th. Arrangements were made for holding a joint meeting with the medical personnel of the Department of Soldiers' Civil Re-Establishment, associated with the treatment of Tuberculosis. This clinical and administrative session will take place in Ottawa after the New Year.

Dr. J. T. Dunston, Commissioner in Mental Diseases for the Union of South Africa, was the guest of the Canadian National Committee for Mental Hygiene during the latter part of October. Dr. Dunston visited the Ontario Hospital at Whitby, the Westminster Psychopathic Hospital, London, and the many mental hygiene activities in Toronto in which the National Committee is interested.

Requests for the artistic folder issued this year for use by Public Health Nurses, attached to health and educational departments, and at children's clinics, will soon reach the 100,000 mark. It is being produced in English as well as French by the Canadian Association for the Prevention of Tuberculosis. Dr. Baudouin, Superior Board of Health, Quebec, is responsible for the perfect translation of Dr. Porter's excellent "Good Health" message.

Although the Diet Series, issued by the Child Hygiene Section of the C. P. H. A. have been sold in very large quantities there are still many people interested in Child and Infant Welfare who have not seen these useful little folders, which hold so much information for mothers, and all who work for young children. They are to be obtained at the C. P. H. A. office, 206 Bloor Street West, Toronto.

It has just been announced at Dalhousie University that the next course in Public Health Nursing will begin October 25th. It will be remembered that in its beginning this course in Public Health Nursing was made possible by the generosity of the Nova Scotia Red Cross in giving scholarships to fully trained nurses who were applicants. The course will be continued by the University under the same admission requirements, namely, that those nurses registering have a good preliminary education and a good general hospital training, including maternity and care of children.

For this year the Red Cross Society, a few days ago, raised its Public Health Nursing scholarship grants from two hundred to three hundred and fifty dollars. The Victorian Order of Nurses, in July, determined to require all applicants for admission to the order to take a course offered in the various universities in Canada. They are offering scholarships of four hundred dollars for V. O. N. applicants.

The demand for Public Health Nurses is increasing in every county of the Province. Dalhousie University in its desire to assist Nova Scotia is giving the service of several professors in the University free of cost. The entire teaching corps engaged by the University for the conduct of this course are giving their time free, because of their interest in Public Health Work.

The seventh annual meeting of the Association of Medical Health Officers of the Province of Nova Scotia was held in Truro, on Tuesday, September 27, 1921—the morning and afternoon sessions being held in the Court House, where rooms had been placed at the disposal of the Association by the municipal authorities, and the evening session, to which the public were invited, being held in one of the assembly rooms of the Normal College.

The meeting was very well attended, instructive papers were received, and much discussion on various phases of public health work in the province took place, which discussion must have been of material benefit to those participating, and to those desirous of being informed of the progress of public health efforts in various portions of the province.

Interesting and timely papers on Venereal Diseases and Typhoid Fever were presented, and were discussed by the members present. A very valuable paper dealing with the historical aspect of an outbreak of leprosy in Nova Scotia, now fortunately for many years non-existent, was presented, was listened to with great interest, and its value fully appreciated by those present.

In addition to the papers which had been prepared for presentation to the Association, many matters of timely interest were discussed. Resolutions were introduced, and passed, in appreciation of the value of the "Canadian Mothers' Book" recently issued by the Federal Department of Health at Ottawa in its assistance to the Child Welfare work being undertaken throughout the Dominion, in affirmation of the advisability of the removal of restrictions on the importation into Canada of Arseno Benzol derivatives, and the removal of duty on Sputum Cups, in support of a proporal to place the compilation of vital statistics in the Province of Nova Scotia under the Department of Public Health, and in favour of calling the attention of the practitioners of Nova Scotia to the importance of greater accuracy in reporting infectious diseases, including venereal diseases.

At the evening meeting, which was an open meeting, valuable papers were contributed by Dr. Craig, the Provincial Red Cross Commissioner, Dr. Gill, under whose supervision the milk inspection of the town of Truro is carried on, and Dr. Royer, the Executive Officer of the Massachusetts-Halifax Health Commission.

These papers and discussions, and the opportunity for practical observation and study afforded by a visit to the Truro Chlorination Plant, provided a programme of more than usual interest and value.

On the same day a conference of the public health nurses, on duty in the province, was held, this being the first opportunity they have had since going on duty to meet and discuss the questions which had been brought to the fore in their year of practical work. The public health nurses in Nova Scotia now number 14 and all were present at the conference. After an interesting morning session, addressed by the Provincial Health Officer, and afterwards devoted to a general discussion of various phases of the work, the afternoon and evening session of the Association of M. H. O.'s were attended by the nurses, or by as many of them whose engagements so permitted.

No doubt can exist concerning the value of the meeting and conference, and the promise these give for more and better public health work being done in Nova Scotia during the coming year as the immediate result.

Notes on Current Literature

FROM THE DEPARTMENT OF INFORMATION ON PUBLIC HEALTH, CANADIAN RED CROSS SOCIETY.

Suggestions for a Red Cross Health Programme.

Dr. Winslow, Director of the Department of Health, League of Red Cross Societies, outlines for Red Cross health workers useful activities in health study classes, infant and child welfare, public health nursing and in campaigns against tuberculosis and venereal diseases. (Int. Journ. Pub. Health, Sept.-Oct., 1921, p. 488.)

Public Health Expenditures.

An analysis of expenditures on health work in 52 county boroughs in England in 1919-1920 shows that each £100 expended was distributed in the following manner:

Infectious diseases	£26
Tuberculosis	30
Maternity and Child Welfare	13
School Medical Services	9
Venereal Diseases	5
Administration, Food Control, Sanitation	17
Total	£100

—(Nat. Health, Oct. 21, p. 48.)

Value of Child Welfare Work.

The child welfare problem is not only a family problem but a community problem, the solution of which depends on the prevention of existing evils rather than attempts to cure the results of these evils. (Bulletin West Virginia Dept. of Health, Oct., 1921, p. 125.)

The Industrial Nurse and Her Opportunity.

A clear explanation of the relations of the industrial nurse to the employer, the employee and the community. (The Pacific Coast Journ. Nursing, Oct., 1921, p. 604.)

Syphilis and Infant Deaths.

Forty-eight per cent. of deaths under one year occur during the first month of life. Natal and prenatal causes are responsible for 43% or more than twice as many deaths under one year as any other cause group. (U. S. Pub. Health Report, Sept. 23rd, 1921, p. 2305.)

Preservation of Maternal Nursing.

The readiness with which many mothers wean their babies can be attributed largely to the prevailing ignorance of the properties of maternal milk and its perfect adaptation to the needs of the child. This article details the technique employed by Dr. Truby King for the preservation and restoration of breast milk. (Nat. Health, Oct., 1921, p. 53.)

School Nursing for the American Red Cross.

The American Red Cross now employs 1,355 public health nurses for the most part in the rural districts of the United States. During the past year these nurses examined half a million school children and paid visits to over one million homes. (The Pacific Coast Journal of Nursing, Oct., 1921, p. 597.)

The School Nurse—Her Duties and Methods.

Medical inspection of school children loses much of its value without a school nurse to act as health teacher in the school and carry the work to completion in the home. This article tells just how she does it. (The American City, Sept., 1921, p. 190.)

Promoting Employees' Health.

Since the Bethlehem Shipbuilding Corporation provided a good cafeteria, a better spirit has developed among the workers and the better food has meant better work. (California Board of Health Bulletin, July, 1921, p. 11.)

Medical Profession and Prevention of Tuberculosis.

An address by Sir Humphrey Rolleston before the International Union Against Tuberculosis, showing the roles played by physicians in the prevention of this disease. (Int. Journ. Pub. Health, Sept.-Oct., 1921, p. 405.)

Prevention of Cancer.

Dr. Wood, of the Institute of Cancer Research at Columbia University, explains the importance of public education as a means to stem the rising tide of cancer mortality. Cancer in its earliest stages is a local growth that can usually be cured by prompt removal of the growth but only a small proportion of persons suffering from the malady consult a physician even when they know they have a tumor. (Health News, August, 1921, p. 170.)

First Aid in Industrial Plants.

One of the divisions of the Bell Telephone Company had in 1916 12 lost time accidents per 100 employees. First aid courses were introduced, and the number of accidents has decreased to 1.4 per 100 employees. (Nation's Health, Oct., 1921, p. 543.)

Venereal Disease Clinics.

An address by the British Minister of Health before the North European Conference on Venereal Diseases. This paper describes the plan and operation of a model clinic for the treatment of these diseases. (Nation's Health, Oct., 1921, p. 551.)

Health Service for Insured Employees.

Ten years ago the Metropolitan Life Insurance Company introduced a health service, which now includes over thirteen million wage earners or their families. During this decade the expectation of life of the insured white male increased nearly four years. This gain cannot be attributed entirely to the health service, but it is a remarkable achievement. (Met. Life Ins. Statistical Bulletin, Oct., 1921, p. 1.)

Suggestions for Making a Tuberculosis Survey,

This article was written as a handbook for nures or others who might wish to take stock of tuberculosis activities and needs in any community. It has been arranged in the form of specific enquiries which make simpler the work of the surveyor. (Pub. Health Nurse, Oct., 1921, p. 497.)

The Employment of the Tuberculous." "P. H. Nurse," Oct., 1921, p. 539.

Publicity and Health Education, "P. H. Nurse," Oct., 1921, p. 532.

Prevention of Pneumonia, "Health News," Sept., 1921, p. 180.

The A. B. C. of Eating, "Commonhealth," May-June, p. 120.

Book Reviews

Tuberculosis and How to Combat it. By F. M. Pottenger, M.D. Cloth $2.00. Pp. 273. St. Louis: The C. V. Mosby Co., 1921.

This book represents the substance of Pottenger's talks to his sanatorium patients. It is recognized that success in the treatment of tuberculosis depends greatly upon the co-operation of the patient with the physician, and this can be best secured by instructing the patient both in the nature of the disease and in the measures which have proven of value in treatment and in prevention. It is a splendid addition to the group of books already available to place in the patient's hands. We congratulate the author who, writing from Southern California, has the frankness to say, "There is no specific climate for the treatment of tuberculosis. It can be treated successfully anywhere." J. H. ELLIOTT.